

Addressing the 2020 Emissions Reversal

Credit Reversal Review, Buffer Pool Adjustments & Management Strategies for Ecuador's ART TREES Program

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1 1. Introduction

This report addresses the 2020 emissions reversal within Ecuador's REDD+ program under the Architecture for REDD+ Transactions (ART) TREES Standard Version 2.0 (ART 2021). It outlines the required compensatory actions, the documented 2020 reversal event, strategies for credit management, and recommendations for upcoming validation audits.

Under Section 7.1 of the TREES Standard V2.0, reversals are defined as emissions exceeding the established baseline during the crediting period, which must be compensated by the deduction of credits verified from other years within the same crediting period (Section 7.1.3). In addition, a reassessment of non-permanence risks may result in an increase in the buffer pool contribution rate for future crediting periods (Section 7.1.2).

Given the material impact of the 2020 reversal, verifiers are expected to apply heightened scrutiny during the upcoming validation and verification processes. To ensure that Ecuador's TMR and TRD submissions align with ART requirements, secure validation, and minimize the financial implications of reversal compensation, this report offers targeted recommendations and to strengthen compliance and program resilience.

2 2. Objectives

Specifically, this report aligns with deliverables defined in the contract's terms of reference and focuses on the following objectives:

Analysis of the 2020 Emissions Reversal

- Review the reversal loss calculation to confirm compliance with TREES Sections 5, 7, and 10 regarding crediting levels and emissions reductions.
- Assess the impact of the reversal on future crediting periods, including its effect on credit availability and buffer pool contributions.
- Provide recommendations for managing the reversal, including appropriate credit deductions and mitigation strategies to prevent similar events in future periods.

Guidance on Buffer Pool Adjustments & Credit Allocations

- Develop strategies to address buffer pool contributions post-reversal, including reassessment of non-permanence risks in alignment with TREES Section 7.1.3.
- Provide technical advice on credit allocation strategies.
- Ensure transparent documentation of credit adjustments, with robust justifications, for inclusion in the next TREES Monitoring Report (TMR).

Strategies for Mitigating Future Reversal Risks

- Conduct review of Ecuador’s National Forest Monitoring System (NFMS) and MRV processes to confirm alignment with TREES requirements, including components of:
 - QA/QC protocols for Activity Data (AD) and Emission Factors (EF).
 - Ensuring EF confidence intervals meet TREES standards.
- Recommend enhanced remote sensing technologies and early-warning systems to detect and address annual or seasonal deforestation risks.
- Recommend targeted scaling of deforestation mitigation programs, including through community-based forest management initiatives, reforestation and restoration projects, and integration of economic incentives for sustainable agricultural practices to reduce forest pressures.

Technical Preparedness for Upcoming Validation Audit

- Build capacity through training and technical support to prepare for heightened scrutiny during validation and verification audits, including recommendations for:
 - Responding effectively to Validation and Verification Body (VVB) findings.
 - Ensuring consistency and compliance across reporting periods and submissions.

3 3. Findings

3.1 3.1 Analysis of the 2020 Reversal

Under TREES Section 7.1, reversals occur when emissions exceed the established baseline during the crediting period, requiring compensation through credit deductions from the same

period. In 2020, Ecuador’s reported emissions (81,756,832.52 tCO₂-e) exceeded the baseline emissions (69,394,984.52 tCO₂-e) by 12,361,848 tCO₂-e, constituting a significant reversal.

$$\begin{aligned} \text{Reversal Loss} &= 2020 \text{ Emissions} - \text{Baseline Annual Emissions} \\ \text{Reversal Loss} &= 81,756,832.52 - 69,394,984.52 = 12,361,848 \text{ tCO}_2\text{-e} \end{aligned}$$

The reversal necessitates compensatory actions to ensure compliance with TREES requirements.

3.2 3.2 Guidance on Buffer Pool Adjustments

The TREES Standards V2.0 emphasizes the importance of a robust buffer pool to address non-permanence risks and ensure the permanence of emission reductions. To address the 2020 reversal, Ecuador must take the following actions:

Mandatory Increase in Buffer Pool Contribution:

As outlined in TREES Section 7.1.3, the 2020 reversal triggers a mandatory 5% increase in buffer pool contributions for a period of five years. This ensures that the buffer pool compensates for the elevated non-permanence risks associated with the event. During this period, the adjusted buffer pool rate must apply to all future credit issuance.

Mitigating Factors for Buffer Rate Adjustment:

In Section 7.1.1 of the TREES Standards, requirements allow jurisdictions to lower their baseline buffer contribution rate of 25% if specific mitigating factors are demonstrated. Based on the activities detailed in Ecuador’s TRD, the program may qualify for Mitigating Factor 3 (-5%) due to its national reversal mitigation actions aligned with Cancun Safeguard F, which include:

- National Forest Monitoring System (NFMS): Tracks emissions, monitors leakage, and supports data-driven mitigation strategies.
- Criminal Code Enforcement: Provisions to address environmental crimes such as land invasion and illegal logging.
- Results-Based Payment Initiatives: Programs like the REM Ecuador initiative and GCF-supported activities promote sustainable land use and reversal risk mitigation.
- Financial and Institutional Capacity Building: Measures like the Environmental and Social Risk Analysis System (SARAS) integrate reversal mitigation into financial strategies and support sustainable land use practices.

Given these activities, Ecuador’s adjusted buffer contribution rate would likely be reduced from 25% to **20%** (25% base rate minus 5% for Mitigating Factor 3; TREES Standards V2.0: 42).

Addressing Deficits in Buffer Contributions:

If the credits retired to compensate for the 2020 reversal exceed Ecuador's cumulative buffer contributions, the shortfall must be replenished. This can be achieved by:

- Allocating future credits to the buffer pool until the deficit is resolved.
- Ensuring transparent documentation in the next TREES Monitoring Report to demonstrate compliance with Section 7.1.3.

3.3 3.3 Guidance on Credit Allocation Strategies

To minimize the financial impact of the 2020 reversal and maximize the value of Ecuador's remaining credits, the following credit allocation strategies are recommended:

Prioritize Older, Lower-Value Vintages for Reversal Compensation:

Use credits issued in 2017 and 2018 to offset the reversal. These older vintages typically hold lower market value due to depreciation over time and are ideal for compliance purposes.

Preserve Recent, Higher-Value Credits for Future Transactions:

Retain credits from 2019 and 2021, which are likely to command higher prices in voluntary and compliance carbon markets. Preserving these credits positions Ecuador to maximize revenue from future transactions and maintain flexibility in managing carbon assets.

Ensure Transparent Documentation:

Provide clear and detailed records of all credit adjustments in the next TREES Monitoring Report, including:

- The volume of credits retired and the vintages used.
- Justifications for the prioritization of certain vintages.
- Evidence of buffer pool replenishment, if applicable.

3.4 3.4 Mitigating Risk of Future Reversals

Drivers of Reversal:

In addition to population pressures and labour markets, the economic downturn caused by the COVID-19 pandemic likely contributed to an increased reliance on forest resources for subsistence and informal activities. As referenced in the TMR and TRD, key drivers of deforestation in the country include the following:

- Agricultural expansion: Expansion of agricultural land involving slash-and-burn practices, particularly in coastal regions where tradition of similar land-use decisions have contributed to deforestation (TMR, p.14; TRD p.17, p.76)
- Forest management: Selective logging and resource extraction for fuelwood and timber contributing to deforestation in the Andean region (Sierra, Calva, and Guevara 2021).